Alberta
HUMAN RESOURCES AND EMPLOYMENT

the people & workplace department

September 2001

# Occupational Injuries and Diseases in Alberta

## Oil & Gas Exploration & Development 1996 to 2000

## Upstream Oil and Gas Sub-Sector #7

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# 1. Introduction

*The Mission of Alberta Human Resources and Employment*

Alberta Human Resources and Employment's mission is to foster safe and healthy workplaces. Workplace Health and Safety works within the continuum of services provided by Alberta Human Resources and Employment. Its focus is on the development and implementation of strategies and initiatives aimed at meeting the department's goal that Alberta will have a fair, safe and healthy work environment. To this end, Alberta Human Resources and Employment recognizes that monitoring workplace health and safety will help to ensure that primary concerns are actively managed and that resources are directed where needed.

This report summarises the lost-time injuries and disease descriptions, characteristics of the injured worker and the risk of injury to workers in Alberta's upstream oil and gas industries for the years 1996 to 2000. Cost of the injuries and revenue in terms of total premiums paid by employers. Finally, a summary of occupational fatalities accepted by the WCB for compensation and brief descriptions of fatalities investigated by Occupation Health and Safety are also provided.

The purpose of this report is to provide government, employers, workers and health and safety officers in upstream oil and gas industries with information about the industry key health and safety issues.

*Description of Upstream Oil and Gas Industries*

The upstream oil and gas industries can be subdivided into the following sub-sectors.
Exploration, Oilfield Maintenance and Construction, Well Servicing with Service Rigs and Power Swivels, Drilling of Oil and Gas Wells, Oilfield Downhole and Other Services, Tar Sands, Oil and Gas exploration and Development, and Oilfield Trucking Services.

The next section gives the descriptions of the Oil and Gas Exploration and Development sub-sector.

## 2. Sub-Sector Description

**Sub-Sector # 7: Oil/Gas Exploration/ Development- Upstream Operations**

*Oil &Gas Exploration & Development-upstream operations (Industry # 06300)*
This industry covers all "upstream" oil field activities of employers, which generate revenue from the production and sale of crude oil and/or natural gas. This includes both the small independent producer and major integrated oil and gas companies. Oil and gas companies direct/control/evaluate/supervise oil and gas exploration and development; however, they subcontract the actual field operations prior to the production stage (i.e. seismic, drilling). In effect, they are general contractors for this phase of the industry.

The operations of all upstream production/processing facilities are covered under this classification when conducted by the owner/producer.

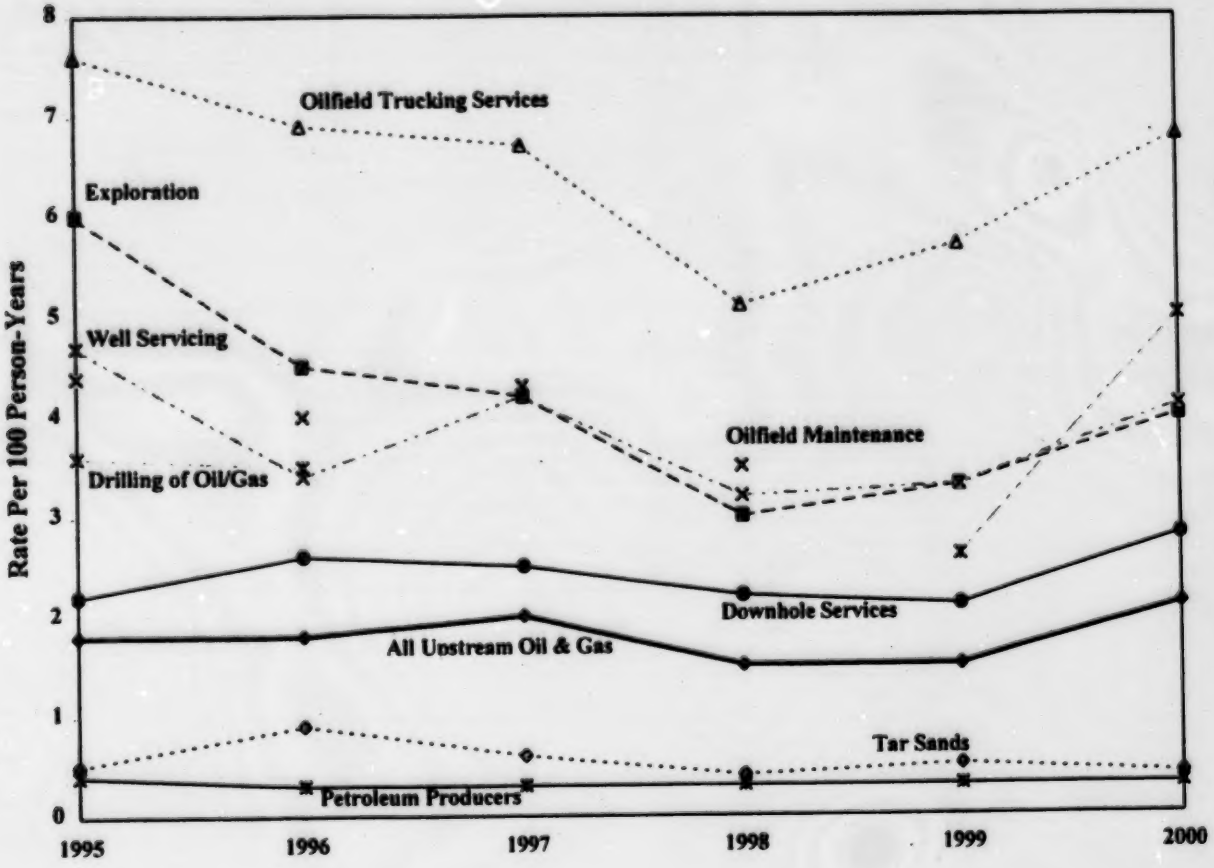
Oil or gas marketing firms, companies that are not producers but purchase product from other producers and resell, are considered part of this industry. They take title to the product and generate revenue from the sale of crude oil or natural gas.

Large oil companies may become involved in all aspect of oil exploration, processing and sale. Smaller companies may become involved only in the production and/or sale. Other companies may become involved in oil exploration purely on a speculative basis. All such employers are covered under this industry.

Upstream production facilities include:
- oil/gas well, well head equipment
- flow lines/gathering systems tied into field processing facilities
- battery sites/compressors stations
- crude oil separators and natural gas dehydrators/treaters
- natural gas/sulfur processing plants
- heavy oil projects including steam generation
- other enhanced recovery methods

Gas processing plants are normally located in the vicinity of the producing fields, and are tied directly into gas well through a network of gathering systems. This is considered to be an upstream production activity by the industry and is a common activity of major producers. Gas plants incorporate process technology, similar to refineries and petrochemical plants, for the purpose of removing impurities such as sulfur and water prior to transmission to the market.

# Lost-Time Claim Rates
# Upstream Oil & Gas Subsectors
# Alberta: 1995-2000



# 3. Lost-Time Claim Rates and Duration Rates

### 6300-Oil & Gas Exploration & Development

| Year | # of Accounts | Cost | Person Years | Days Lost | Duration Rate | LTCs | LTC Rate |
|---|---|---|---|---|---|---|---|
| 1996 | 1,831 | $673,641 | 33,410 | 1,890 | 6 | 107 | 0.3 |
| 1997 | 2,179 | $1,810,837 | 33,765 | 3,430 | 10 | 100 | 0.3 |
| 1998 | 2,274 | $643,090 | 36,596 | 2,788 | 8 | 111 | 0.3 |
| 1999 | 2,418 | $659,516 | 32,275 | 2,736 | 8 | 101 | 0.3 |
| 2000 | 2,702 | $855,709 | 29,385 | 2,078 | 7 | 90 | 0.3 |

## 3.1 LTC Rates by Size of Employer: 2000

| Size of Employer | # of Accounts | LTCs | Person - Years | LTC Rate |
|---|---|---|---|---|
| A: 0 <= PYs < 1 | 2,043 | 5 | 1,230 | 0.4 |
| B: 1 <= PY < 5 | 344 | 5 | 697 | 0.7 |
| C: 5 <= PYs < 10 | 98 | 1 | 728 | 0.1 |
| D: 10 <= PYs < 20 | 67 | 2 | 940 | 0.2 |
| E: 20 <= PYs < 40 | 51 | 2 | 1,375 | 0.1 |
| F: 40 <= PYs < 100 | 44 | 5 | 2,747 | 0.2 |
| G: PYs >= 100 | 55 | 70 | 21,669 | 0.3 |
| Total | 2,702 | [illegible] | 29,385 | 0.3 |

# 4. Analysis of the Lost-Time Claims

## 4.1 Nature of Injury

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| SPRAIN, STRAIN, TEARS | 40 | 37 | 43 | 42 | 29 | 191 | 37.5 |
| FRACTURE/DISLOCATION | 19 | 18 | 15 | 16 | 13 | 81 | 15.9 |
| BURNS | 11 | 10 | 13 | 12 | 7 | 53 | 10.4 |
| OTHER TRAUMATIC INJURY/DISEASE | 14 | 11 | 8 | 9 | 10 | 52 | 10.2 |
| SYSTEMATIC DISEASES, DISORDERS | 2 | 4 | 18 | 11 | 13 | 48 | 9.4 |
| SURFACE WOUNDS, BRUISES | 9 | 9 | 6 | 3 | 9 | 36 | 7.1 |
| OPEN WOUNDS | 3 | 7 | 5 | 3 | 8 | 26 | 5.1 |
| NATURE - UNS | 7 | 1 | 2 | 3 | 1 | 14 | 2.8 |
| MULTIPLE DISEASE/DISORDERS | 2 | 2 | 1 | 2 | . | 7 | 1.4 |
| TUMORS, CANCER | . | 1 | . | . | . | 1 | 0.2 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 4.2 Duration of Disability

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| 01 - 05 DAYS LOST | 49 | 37 | 42 | 34 | 25 | 187 | 36.7 |
| 06 - 10 DAYS LOST | 12 | 12 | 11 | 13 | 12 | 60 | 11.8 |
| 11 - 15 DAYS LOST | 7 | 6 | 7 | 6 | 6 | 32 | 6.3 |
| 16 - 20 DAYS LOST | 3 | 6 | 4 | 3 | 4 | 20 | 3.9 |
| 21 - 30 DAYS LOST | 12 | 5 | 6 | 7 | 3 | 33 | 6.5 |
| 31 - 40 DAYS LOST | 2 | 6 | 7 | 5 | 5 | 25 | 4.9 |
| 41 - 50 DAYS LOST | 4 | 5 | 5 | 1 | 9 | 24 | 4.7 |
| 51 OR MORE DAYS LOST | 11 | 16 | 15 | 18 | 13 | 73 | 14.3 |
| DAYS LOST-UNSPECIFIED | 7 | 7 | 4 | 14 | 13 | 55 | 10.8 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 4.3 Type of Event/Exposure

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| UNKNOWN | 12 | 7 | 2 | 13 | 2 | 36 | 7.1 |
| OVEREXERTION | 14 | 19 | 22 | 16 | 14 | 85 | 16.7 |
| EXPOSURE TO HARMFUL SUBSTANCES | 12 | 10 | 21 | 9 | 15 | 67 | 13.2 |
| BODILY REACTION | 14 | 16 | 16 | 12 | 6 | 64 | 12.6 |
| TRANSPORTATION ACCIDENTS | 15 | 14 | 10 | 12 | 7 | 58 | 11.4 |
| FALL ON SAME LEVEL | 11 | 7 | 9 | 9 | 12 | 48 | 9.4 |
| STRUCK BY OBJECTS | 9 | 10 | 7 | 5 | 10 | 41 | 8.1 |
| CAUGHT IN OBJECTS | 6 | 7 | 5 | 2 | 3 | 23 | 4.5 |
| REPETITIVE MOTIONS | 1 | 2 | 3 | 8 | 9 | 23 | 4.5 |
| FALL TO LOWER LEVEL | 4 | 3 | 5 | 4 | 4 | 20 | 3.9 |
| STRUCK AGAINST OBJECTS | 4 | 1 | 3 | 2 | 5 | 15 | 2.9 |
| FIRES AND EXPLOSIONS | 4 | 2 | 2 | 5 | 1 | 14 | 2.8 |
| OTHER FALLS | 1 | 1 | 3 | 2 | . | 7 | 1.4 |
| OTHER BODILY REACTION/EXERTION | . | . | 1 | 1 | 2 | 4 | 0.8 |
| ASSAULT/VIOLENT ACT BY PERSON | . | 1 | 1 | . | . | 2 | 0.4 |
| RUBBED OR ABRADED | . | . | 1 | 1 | . | 2 | 0.4 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 4.4 Part of Body Injured

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| BACK | 22 | 26 | 25 | 21 | 19 | 113 | 22.2 |
| LEG(S) | 16 | 11 | 13 | 8 | 9 | 57 | 11.2 |
| MULTIPLE BODY PARTS | 10 | 11 | 7 | 18 | 10 | 56 | 11.0 |
| ANKLE(S) & FOOT(FEET)-NOT TOES | 12 | 10 | 14 | 9 | 10 | 55 | 10.8 |
| OTHER HEAD | 7 | 9 | 13 | 7 | 15 | 51 | 10.0 |
| OTHER TRUNK | 6 | 10 | 12 | 11 | 9 | 48 | 9.4 |
| HAND(S) | 7 | 5 | 8 | 9 | 5 | 34 | 6.7 |
| EYE(S)-OPTIC NERVE,VISION | 4 | 7 | 6 | 5 | 2 | 24 | 4.7 |
| FINGER(S) | 5 | 5 | 5 | 2 | 6 | 23 | 4.5 |
| OTHER UPPER EXTREMITIES | 5 | 3 | 3 | 8 | 3 | 22 | 4.3 |
| NECK | 7 | 1 | 3 | 1 | 1 | 13 | 2.6 |
| BODY SYSTEMS | 3 | 1 | 1 | 1 | . | 6 | 1.2 |
| OTHER LOWER EXTREMITIES | 2 | 1 | . | . | 1 | 4 | 0.8 |
| UNKNOWN | 1 | . | 1 | 1 | . | 3 | 0.6 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

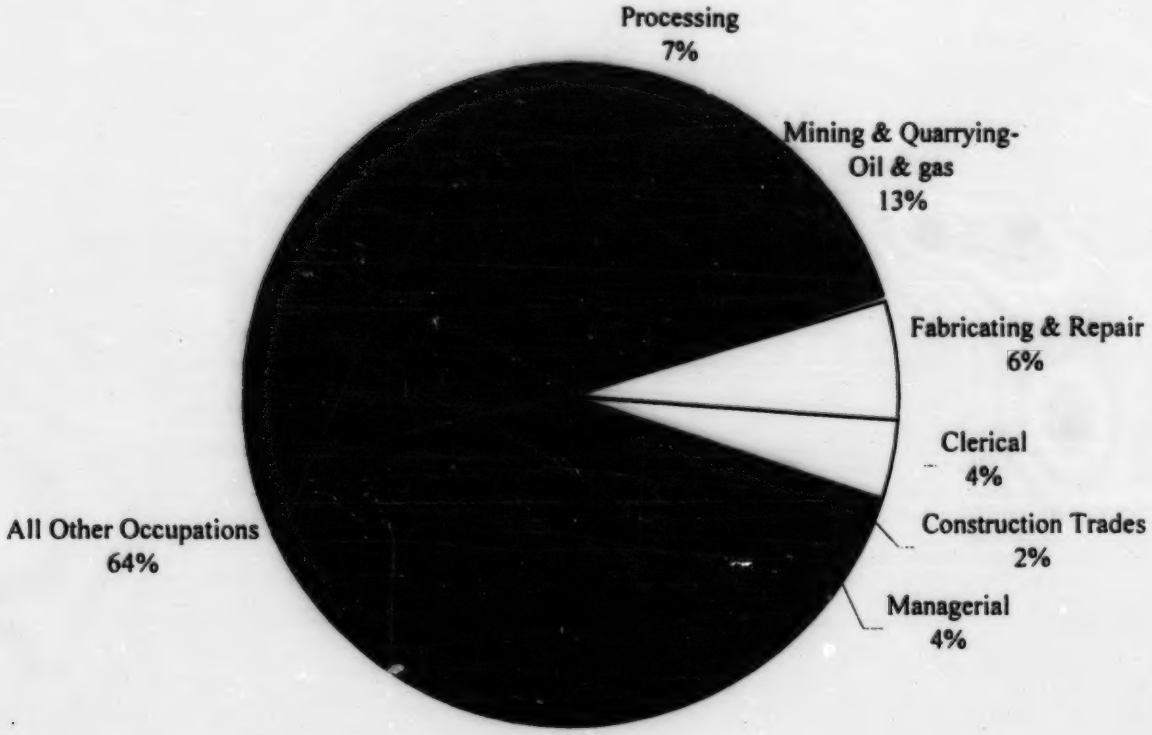
## 4.5 Source of Injury

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| UNKNOWN | 18 | 12 | 11 | 20 | 5 | 66 | 13.0 |
| PERSONS-INJURED WORKER | 16 | 18 | 20 | 21 | 14 | 89 | 17.5 |
| STRUCTURES/SURFACES | 15 | 8 | 14 | 15 | 11 | 63 | 12.4 |
| VEHICLES | 15 | 15 | 10 | 12 | 11 | 63 | 12.4 |
| OTHER SOURCES | 11 | 8 | 17 | 11 | 16 | 63 | 12.4 |
| PARTS & MATERIALS | 10 | 10 | 9 | 12 | 14 | 55 | 10.8 |
| CONTAINERS | 11 | 9 | 10 | 3 | 3 | 36 | 7.1 |
| CHEMICAL/CHEMICAL PRODUCTS | 2 | 5 | 6 | 2 | 2 | 17 | 3.3 |
| MACHINERY | 1 | 6 | 4 | . | 4 | 15 | 2.9 |
| HANDTOOLS-UNPOWERED | 3 | 3 | . | 3 | 2 | 11 | 2.2 |
| FURNITURE & FIXTURES | 2 | . | . | 1 | 4 | 7 | 1.4 |
| OTHER TOOLS/EQUIPMENT | . | 2 | 4 | 1 | . | 7 | 1.4 |
| MINERAL-METALS/NONMETALS | . | 1 | 2 | . | 3 | 6 | 1.2 |
| HANDTOOLS-POWERED | 1 | 2 | 2 | . | . | 5 | 1.0 |
| PERSONS-NOT THE INJURED WORKER | . | 1 | 2 | . | . | 3 | 0.6 |
| PLANTS & ANIMALS | 1 | . | . | . | 1 | 2 | 0.4 |
| OTHER PLANTS/ANIMALS/MINERALS | 1 | . | . | . | . | 1 | 0.2 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 5. Characteristics of the Injured Worker

### 5.1 Occupation of the Injured Worker

**Occupation of the Injured Worker**
**1996-2000**



## 5.2 Age of injured Worker

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| 15-19 YEARS | 3 | 3 | 2 | 1 | . | 9 | 1.8 |
| 20-24 YEARS | 6 | 8 | 7 | 10 | 3 | 34 | 6.7 |
| 25-34 YEARS | 25 | 22 | 33 | 27 | 14 | 121 | 23.8 |
| 35-44 YEARS | 50 | 44 | 38 | 38 | 36 | 206 | 40.5 |
| 45-54 YEARS | 18 | 18 | 22 | 19 | 23 | 100 | 19.6 |
| 55-64 YEARS | 5 | 4 | 9 | 5 | 8 | 31 | 6.1 |
| 65 YRS AND OVER | . | 1 | . | 1 | 6 | 8 | 1.6 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 5.3 Length of Time Employed

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| A. LESS THAN 1 MONTH | 4 | 5 | 6 | 3 | 2 | 20 | 3.9 |
| B. 1 MONTH TO < 6 MONTHS | 12 | 8 | 13 | 16 | 7 | 56 | 11.0 |
| C. 6 MONTHS TO < 1 YEAR | 4 | 9 | 6 | 7 | 8 | 34 | 6.7 |
| D. 1 YEAR OR MORE | 64 | 56 | 58 | 51 | 44 | 273 | 53.6 |
| E. TIME-UNSPECIFIED | 23 | 22 | 28 | 24 | 29 | 126 | 24.8 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 5.4 Gender of Injured Worker

| LOST-TIME CLAIMS ALBERTA: 1996 TO 2000 | OCCURRENCE YEAR | | | | | Total | |
|---|---|---|---|---|---|---|---|
| | 1996 | 1997 | 1998 | 1999 | 2000 | Number | Percent |
| MALE | 92 | 88 | 86 | 84 | 70 | 420 | 82.5 |
| FEMALE | 11 | 10 | 22 | 15 | 19 | 77 | 15.1 |
| GENDER-UNSPECIFIED | 4 | 2 | 3 | 2 | 1 | 12 | 2.4 |
| Total | 107 | 100 | 111 | 101 | 90 | 509 | 100.0 |

## 6. Cost of Claims and Employer Premiums

***Sub-Sector 7-Oil & Gas Exploration/Development***

| | Occurrence Year | | | | |
|---|---|---|---|---|---|
| **Transaction Year** | **1996** | **1997** | **1998** | **1999** | **2000** |
| 1996 | $515,718 | | | | |
| 1997 | $413,430 | $1,064,573 | | | |
| 1998 | $436,156 | $989,481 | $511,098 | | |
| 1999 | $148,065 | $602,140 | $472,233 | $719,283 | |
| 2000 | $290,283 | $295,183 | $212,953.2 | $525,294 | $657,906 |
| **Total cost** | $1,803,652 | $2,951,376 | $1,196,284 | $1,244,577 | $657,906 |
| **Total Premiums** | $4,437,741 | $5,165,790 | $3,753,545 | $3,575,661 | $4,094,226 |

The above cost of lost-time claims and premiums are for the five-year period 1996 through to 2000. The data are as of May 4, 2001.

The claim cost reflects only paid cost on lost-time claims that occurred in the five-year period. These costs are tracked by year of occurrence and the year that the costs were transacted.

The premiums are the total premiums paid by employers for each year.

## 7. Occupational Fatalities

An occupational fatality is the death of a worker that results from a work-related incident or exposure. Alberta Human Resources and Employment classifies occupational fatalities into three general types: motor vehicle incident, workplace incident and occupational diseases. Each is described in detail below.

*Motor Vehicle Incident*

Motor vehicle incidents typically involve highway vehicles operating on public roads in which the fatally injured worker was either the driver or a passenger. This category also includes fatalities involving aircraft crashes, train crashes, helicopter crashes, etc.

*Workplace Incident*

Fatal workplace incidents consist of cases in which the worker dies at a work site, or as a result of injuries sustained at a work site. It is this type of fatality that Alberta Human Resources and Employment may be responsible for investigating.

*Occupational Diseases*

Occupational disease fatalities consist mostly of recognized occupational disease, that is, disease known to be primarily or exclusively work-related (e.g. asbestosis, black lung disease). Occupational diseases are frequently diagnosed many years after the initial or crucial exposure to the toxic substance, and in such cases it is very difficult to determine when the fatal exposure occurred. Thus, the occupational disease category should not be interpreted to reflect present work site hazardous conditions or exposures.

Each year the Workers' Compensation Board (WCB) accepts some occupational fatality claims for compensation. Occupational fatality claims that were accepted in a particular year may include fatalities from prior years.

### Description of Petroleum Producers Workplace Fatalities Accepted by the WCB

| YEAR | Occupational Diseases | | Motor Vehicle Incidents | | Workplace Incidents | | Total | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| 1996 | 0 | 0 | 1 | 100.0 | 0 | 0 | 1 | 100 |
| 1997 | 1 | 20.0 | 4 | 80.0 | 0 | 0 | 5 | 100 |
| 1998 | 1 | 33.3 | 1 | 33.3 | 1 | 33.3 | 3 | 100 |
| 1999 | 1 | 33.3 | 2 | 66.7 | 0 | 0 | 3 | 100 |
| 2000 | 0 | 0 | 1 | 50.0 | 1 | 50.0 | 2 | 100 |
| Total | 3 | 21.4 | 9 | 64.3 | 2 | 14.3 | 14 | 100 |

## 8. OHS Investigated Occupational Fatalities: 1996-2000

| | | | |
|---|---|---|---|
| YEAR: | 1996 | FILE: | 0828 |
| OCCUPATION: | Inspection, Maintenance of Measuring Equipment | AGE: | 53 |
| INDUSTRY: | Oil & Gas Exploration and Development - Upstream Operations | | |
| EXPERIENCE: | Unknown | | |

DESCRIPTION: The self-employed contractor was in the process of "Gauging" (manually measuring fluid levels) Sour Crude Oil Storage Tanks through openings at the top of the tanks known as "Thief Hatches". The worker was conducting the measurement from an elevated work platform 13' 2" from the ground level. The elevated work platform had guard-rails and was connected to ground by a stairway with hand-rails. Another worker on site witnessed the self-employed contractor go up to the elevated work platform without respiratory protective equipment and/or personal monitoring equipment. The worker became exposed to hydrogen sulfide gases while taking fluid level measurements resulting in losing consciousness and falling over the guard-rail of the stairway to the ground.

# Appendix A: Terms, Definitions, and Formulas

**Lost-Time Claim**

A lost-time claim (LTC) is a claim for an occupational injury or disease, which disables the worker beyond the day of injury. Included are claims for which wages compensation are paid, permanent disability claims, fatalities, and cases in which the injured worker is assigned light duties or other modified work.

**Person-Years**

Person-year estimates are calculated from wage and payroll data provided by account holders to the WCB. Alberta Human Resources and Employment uses these data to estimate an average industry wage, and uses the average industry wage and employer payroll data to estimate person-years for each employer and each industry. One person-year is equivalent to one full-time worker working for one year, and can be assumed to equal 2,000 hours worked.

**LTC Rate**

The lost-time claim (LTC) rate is calculated by dividing the number of lost-time claims by the person-year estimate, and multiplying the result by 100. The LTC rate represents the probability or risk of disabling injury or disease to a worker during a period of one-year work. Comparisons of LTC rates between industries, or between years, can be used to indicate increases, decreases, or differences in this risk.

$$\text{LTC Rate} = \frac{\text{Number of LTCs} \times 100}{\text{Estimated Person-years}}$$

**Duration (Days Lost)**

The duration of disability is the number of days following the injury or disease for which the worker was disabled, and unable to perform normal work duties. This information is obtained for this report from data on compensation days paid on each claim from WCB. Alberta Human Resources and Employment obtains these data on March 31 of the year following the claim year, and does not update the information, even though many injured workers continue to be disabled beyond this date. As a result, the duration information reported here underestimates the true impact of lost-time injury and disease.

**Duration Rate**

The duration rate is calculated by dividing the number of workdays lost (disability days) by the person-year estimate, and multiplying by 100. The result is expressed as days lost per 100 person-years worked, and indicates, in part, the economic impact of occupational injury and disease. Duration rates are not recommended as reliable indicators of full economic cost. In addition, readers are warned that duration rates are highly unstable when based on only a few lost-time claims; it is recommended that the duration rate not be calculated based upon fewer than 30 lost-time claims.

$$\text{Duration Rate} = \frac{\text{Disability Days} \times 100}{\text{Estimated Person-Years}}$$

**WCB Accepted Fatality**

An occupational fatality is the death of a worker which resulted from a work-related incident or exposure and which has been accepted by the WCB for compensation. A fatality is counted in the year it is accepted.

**NEC**

Means 'Not Elsewhere Classified'.

**UNS**

Means 'Unspecified'.

## Appendix B: Upstream Oil and Gas 2000 Industry Codes

**Sub-Sector 1:** **Exploration**
Industries: 09200~Seismic Geophysical/Mineral Exploration
09201~Shot Hole Drilling

**Sub-Sector 2:** **Oilfield Maintenance and Construction**
Industries: 06304~Oilfield Construction and/or Maintenance

**Sub-Sector 3:** **Well Servicing With Service Rigs**
Industries: 09903~Well servicing with Service Rigs including Power Swivels

**Sub-Sector 4:** **Drilling of Oil and gas Wells**
Industries: 09600~Drilling of Oil & Gas Wells

**Sub-Sector 5:** **Downhole & Other Oilfield Services**
Industries 06305~Field Production Operators
06306~Vacuum Removal of Waste
09900~Mud Logging
09902~Pressure Cleaning Services
09904~Rathole Drilling and Rig Anchoring
09911~Oilfield Downhole Services
09915~Well Casing Services
09921~Servicing Christmas Trees On Oil Wells
09927~Liquid Waste Treatment & Disposal

**Sub-Sector 6:** **Tar Sands**
Industries: 06600~Mining & Processing of Bituminous Sand
06601~Research/Development, Oil Sands and Heavy Oil Recovery

**Sub-Sector 7:** **Oil & Gas Exploration/Development**
Industries: 06300~Oil and Gas Exploration & Development-Upstream Operations

**Sub-Sector 8:** **Oilfield Trucking Services**
Industries: 50720~Oilfield Trucking Services

**For further information contact:**

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http://www.gov.ab.ca/hre

Alberta Workplace Health and Safety website:
http://www.whs.gov.ab.ca